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ABSTRACT

This paper examines patterns of change in the number of Aid to Families with Dependent Children (AFDC) recipients in nonmetropolitan and metropolitan Texas counties, 1980-1990. Specifically, the paper analyzes how changes in AFDC enrollment can be explained by demographic and socioeconomic characteristics and the extent to which factors explaining AFDC usage vary in metropolitan and nonmetropolitan areas. Data on the number of AFDC recipients for years 1980 and 1990, changes in AFDC recipients from 1980 to 1990, and percent changes in AFDC recipients from 1980 to 1990 were statistically analyzed with regard to population characteristics; work force patterns; environmental variables such as household income, poverty level, unemployment rates, and educational attainment; and accessibility (as indicated by metropolitan or nonmetropolitan status). Results indicate that population characteristics such as total size, rurality, age, race, and marital status were the most dominant variables in explaining the number of AFDC participants. However, over the 10-year period, environmental and organizational variables also played important roles in predicting changes in AFDC enrollment. It was also evident that factors significantly related to AFDC enrollment were more varied in number and conceptual bases in 1990 than in 1980, and in nonmetropolitan than in metropolitan areas. Includes numerous data tables. (LP)

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Demographic and Socioeconomic Determinants of AFDC Enrollment and Change in Enrollment in Nonmetropolitan and Metropolitan Counties in Texas, 1980 to 1990

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Abstract

Demographic and Socioeconomic Determinants of AFDC Enrollment and Change in Enrollment in Nonmetropolitan and Metropolitan Counties in Texas, 1980 to 1990

by

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Welfare reform has become a topic of national concern. Surprisingly, however, although many of the programmatic determinants of the use of human services have been extensively examined, the impacts of the social and demographic context on the use of human services has not been adequately evaluated, particularly as these may differentiate patterns in nonmetropolitan and metropolitan areas. This paper examines patterns of change in the number of AFDC recipients in nonmetropolitan and metropolitan counties in Texas in the 1980s.

The paper incorporates a model of AFDC caseload change developed by Piskulich (1993) within a human ecological perspective to examine 1980 to 1990 change in AFDC enrollment in nonmetropolitan and metropolitan counties in Texas. Using data from the Texas Department of Human Services and 1980 and 1990 Census data, the effects of demographic and economic conditions, and other factors are examined as they reflect population, environment, technological, and organizational dimensions. The results suggest that ecological dimensions are important determinants of AFDC enrollment and change and that nonmetropolitan and metropolitan counties display different patterns relative to enrollment growth and the determinants of that growth.

Welfare reform has become a major topic of debate both nationally and in states across the country. It is of interest because of the growth in expenditures for such programs and because the increase in the number of persons needing such services is growing faster than the population bases underlying them. Thus, a program such as AFDC resulted in Federal Government expenditures of more than $22 billion in 1992, an increase of 52.4 percent since 1985 (U.S. House of Representatives 1993). In Texas, the number of persons receiving AFDC increased by 146.3 percent from 1983 to 1993 while the population increased by 14.5 percent (U.S. House of Representatives 1993). At the same time, it is evident that the level of unmet need is continuing to increase in nometropolitan as well as metropolitan areas (Jensen and Eggebeen 1994). Clearly, such patterns require concerted national as well as local and state attention.

Research has been conducted on numerous dimensions of human services program usage and management (Taylor 1983; O'Neill et al. 1987; Abe 1993; Giannarelli 1992; Blank and Ruggles 1993; Currie and Gruber 1994). Similarly, there is an extensive base of literature on factors such as poverty which are related to the need for such services (Rural Sociological Society 1993). Most of the existing work, however, has largely attempted to describe past patterns of usage rather than to project future needs. In fact, relative to projections of future needs there is very little to guide the program administrator who must plan to meet future needs. As a result, it becomes critical to address such questions as: What factors, which can be periodically measured, may predict service usage and how might such factors be used to estimate current and project future needs? For the rural scholar, an additional question of interest is: How do factors determining service usage vary among nonmetropolitan and metropolitan areas?

This paper presents the preliminary results of the first stage of a joint program between the Department of Rural Sociology at Texas A&M

University and several state agencies in Texas to examine factors determining AFDC enrollment and change in enrollment in counties in Texas. Although the first stage of analysis, represented in part in the analysis presented in this paper, involves simply examining aggregate determinants at the level of the county, subsequent analyses are to be conducted to examine program dimensions and individual client characteristics impacting enrollment and growth in enrollment. The results reported here are thus clearly preliminary and exploratory.

Specifically, this analysis examines the extent to which AFDC enrollment in 1980 and 1990, and 1980 to 1990 change in enrollment can be explained by demographic and socioeconomic characteristics of Texas counties. It is thus a first stage aggregate analysis of factors that may be useful for subsequent projections of growth in enrollment. In addition, we examine the extent to which the factors explaining AFDC usage vary in metropolitan and nonmetropolitan areas in Texas.

Toward a Conceptual Approach for Understanding AFDC Usage

The dynamics of social program usage are extremely complex. As Piskulich (1993) has noted, rates of program usage can be seen as a function of at least three major set of factors: the characteristics of populations relative to need (e.g., income and poverty levels, family conditions); the economic and socioeconomic conditions of the areas where such populations live (e.g., rates of unemployment, overall levels of wealth, the economic structure of the economy, etc.); and the welfare policies of the state and local areas in which the populations are located (e.g., accessibility of program offices; levels of payments). The last of these three items may be particularly important in joint federal-state programs and has been found to vary substantially in key programs impacting the health of families in the United States (Gold et al., 1993). It must also be recognized that change in the

levels of usage in many programs has been a function of changes in program eligibility requirements (Currie and Gruber 1994). Finally, it is essential to note that service usage and need are likely to be quite different in some areas because of social, economic and other factors which limit participation (Blank and Ruggles 1993).

In this analysis, attention is focused on the first two of the three major sets of determinants noted by Piskulich: that is, the impacts of population and areal characteristics on service usage and growth. In examining such factors, we maintain that the examination of the impacts of such variables can be usefully conceptualized using a human ecological perspective and suggest that it is advantageous to use ecological concepts for organizing the analysis of service usage phenomena.

Viewed ecologically, service usage may be seen as reflecting classical ecological concepts and processes (Hawley 1950; 1986; Duncan 1964; Albrecht and Murdock 1990; Murdock et al., 1993). Specifically, those who must access assistance through human service programs may be seen as persons who have been excluded from effective participation in the sustenance base of an ecosystem and/or as persons living in an ecosystem with a sustenance base that is incapable of meeting the sustenance needs of its population. Program usage is an adaptive mode required because a person or household has been denied access to the sustenance bases in the ecosystem, has lacked opportunities to obtain the skills, etc. necessary to effectively compete in the ecosystem, or has been the resident of an ecosystem which is simply incapable of providing adequate sustenance for its residents.

Several ecological factors may be seen as having made such an adaptive mode necessary and as contributing to its continuation. Viewed as an aggregate phenomena, the ecological concepts of the ecological complex conveniently summarized in the heuristic acronym of the POET variables may be

seen as playing a crucial role in the determination of aggregate rates of program usage.

For example, the characteristics of a population can be expected to impact such usage. The rate of growth in a population should impact usage simply because there are likely to be increases in the number of persons (though not necessarily the rates of usage) requiring services as an ecosystem acquires more members. The age structure of a population should also impact usage since factors related to service usage, such as poverty, are closely tied to specific age groups (Lichter et al. 1994). Similarly, the ethnic composition of a population is likely to lead to differentials in participation. Minority groups have been largely excluded from equitable competition in the sustenance bases of ecosystems in the United States. As a result, both current patterns of exclusion and historical patterns have resulted in minority populations not having the same economic opportunities, and thus possessing fewer of the human capital characteristics necessary to avoid program usage. Such population characteristics are but examples of how population factors may be expected to impact service usage.

Similarly, the environment of an ecosystem may impact the usage levels of its population. It is clear that some environmental settings have simply been more productive of sustenance producing products and have thus supported larger population bases and supported them in greater abundance than other environments (Albrecht and Murdock 1990). This is generally reflected in differentials in current income levels, poverty rates, rates of employment and unemployment and other factors indicative of more or less productive environments.

The key ecological variable is of course that of organization (Hawley 1950; 1986; Duncan 1964), particularly sustenance organization (Gibbs and Martin 1959). In regard to this ecological factor, several phenomena may be

seen as impacting service usage. One of these factors, is simply the nature of the sustenance base of an area. Thus, extensive work on the determinants of poverty (Wilson 1987; Massey and Denton 1993; Massey et al. 1994) have shown that the transition of economies from manufacturing to service and other bases have impacted their population's levels of poverty, and the likely level of need of their population bases. The sustenance base and the key function of an area are likely to impact the level of need in an ecosystem and the level of service usage. Similarly, as Murdock et al. (1993) have noted relative to migration, it is likely that the location of an area's sustenance activity within international ecosystems is critical to the overall level of sustenance produced in an ecosystem.

Another dimension of an ecosystem may also play a role. This is the level of differentiation in the organizational base of an ecosystem. Sustenance bases that are more differentiated should provide more opportunities for participation and thus exclude fewer persons from competing in the sustenance producing base of the ecosystem.

Technological factors may also play a role in participation. Accessibility of services relative to a population in need as well as knowledge of the availability and modes for using services may affect usage. In general, such accessibility may be expected to reflect, at least in part, population density. As a result, it is likely that the location of an area as reflected in urban-rural or metropolitan-nonmetropolitan status will effect rates of service usage.

The ecological framework also provides a useful means of understanding the likely sequence of change in service usage. Ecological theory suggests that environmental, organizational and/or technological factors will lead to a population adapting in a particular manner. Populations will come to reflect the conditions at a given point in time while change occurs through

alterations in the other POET dimensions. Population dimensions should thus be better predictors of cross-sectional patterns of service usage and other POET dimensions of change over time.

In sum, then, rates of service usage can be seen as reflecting an ecological process of adaptation of a population to a set of environmental, organizational and technological factors with change occurring through change in the last three factors and populations coming to reflect the conditions brought about by such changes. It is this set of interrelationships that is examined in this paper.

The ecological perspective also suggests that a service system once established is likely to seek to expand its base beyond those entailed in the initial ecological relationship. Although beyond the scope of the present paper, it might be argued that once the mode of adaptation represented by service usage is established, it is likely to lead to a set of ecological interdependencies that sustain and expand within the ecosystem through the adaptive, evolution and growth processes delineated in the ecological literature (Hawley 1986). Specifically, it appears likely that service system organizations although initially established with a symbiotic interdependence with the persons being served by a specific program may come to develop commensalistic forms of interdependence that seek to expand the niche for such organizations within the system. This is not to suggest that these organizations will create needs where none exist but that they are likely to recognize and expand into other areas of need evident in the populations of the ecosystems in which they operate. In other words, the growth of service programs in an ecosystem might be expected to grow in an exponential rather than a linear manner relative to an ecosystem's population base.

The analysis presented here thus reflects both theoretical and pragmatic concerns. The conceptual concerns are those of discerning the extent to which

the ecological factors operate in the manner expected while the pragmatic basis for the effort is to identify key factors related to service usage and to the growth in service usage in Texas.

Methodology

To examine the impacts of the above noted ecological dimensions on service usage, data were obtained on enrollment in the Aid to Families With Dependent Children (AFDC) Program in counties in Texas. The AFDC program was selected for analysis because it is one with substantial public sector interest and one that is growing rapidly in the State of Texas and was thus of substantial interest to the auspice for the study from which this paper is derived. Data on enrollment in AFDC programs as of April 1 of the Census years of 1980 and 1990 were obtained. These values, plus the 1980-90 percentage change in these factors computed from them, are the major dependent variables used in the analysis. Data on AFDC enrollment were obtained from the Texas Department of Human Services.

The independent variables were selected to be indicative of the four key ecological components of population, organization, environment, and technology. The specific variables for which data were collected and the ecological factor of which each is indicative are shown in Table 1. These variables were obtained entirely from 1980 or 1990 Census data as contained in Summary Tape Files 1 through 3 and the U.S. Bureau of the Census COSTAT census data files for counties. Although most of these variables are self explanatory and their likely relationship to AFDC usage easily discernable, a few require a brief discussion. Thus, the division of labor measure is computed in accordance with the formulation of Frisbie (1984) and is as used in a previous analysis by the authors (Murdock et al. 1993). The index of surplus workers values is also as used in Murdock et al. (1993) and simply indicates the value for the economic sector in which the county was most

specialized. Although the index of surplus worker value does not indicate in which sector a county's economy is specialized, its value does indicate the tendency for the area to have the economic capability to compete as a supplier of goods or services to populations outside of those living within the county. Finally, the index of surplus worker value for sectors in which U.S. dominance is declining (manufacturing, mining, and agriculture) is again derived from the analysis by Murdock et al. (1993) and further measures the extent to which a county's economy is specialized in sectors that are among those producing the lowest returns of sustenance to the residents of areas in which they are dominant.

Metropolitan and nonmetropolitan status are interpreted as indicating relative access to services likely to result from differences in transportation and communication facilities and the number of service facilities. Metropolitan/nonmetropolitan status is as defined in 1980 with metropolitan counties accounting for 49 and nonmetropolitan counties for 205 of Texas 254 counties. (However, relative to AFDC, four Texas counties had no AFDC recipients in 1980 and thus the number of metropolitan counties is 49 with 200 nonmetropolitan counties being included in the analysis.)

Data on the above noted variables were analyzed for multicollinearity using Variance Inflation Factors and intercorrelations and, as is evident in the number of variables shown in the tables below, the number of variables was often reduced to a substantially smaller number of variables for the regression analysis performed due to problems of multicollinearity.

The analysis of the effects of the independent variables on AFDC enrollment and change was completed using multiple regression analysis of four separate models. These models were ones that examined: (1) the regression on the number of AFDC recipients in counties in 1980 of the values of the independent variables in 1980; (2) the regression on the number of AFDC

recipients in 1990 of the values of the independent variables in 1990; (3) the regression on the percentage change in AFDC recipients from 1980 to 1990 on the values of the independent variables in 1980 and; (4) the regression on the percentage change in AFDC recipients from 1980 to 1990 on percentage change in the independent variables from 1980 to 1990. In the last model, the number of recipients in 1980 was used as a control variable for the problems noted in the use of change variables which show change from base populations of different sizes (Hannan 1979; Markus 1979). These four models were selected for analysis because the 1980 and 1990 cross-sectional models (models 1 and 2) provide a means of assessing what factors can be used to project program enrollment at any given point in time and the change models allow one to examine the potential to predict change in usage over time, with model 3 serving to indicate if conditions for a base period can be used to predict change and model 4 indicating which variables, if they could be measured continuously, might provide ongoing symptoms of change in AFDC.

Results

As an initial point in the analysis, the ability to project the number of AFDC recipients using only population size and change in population size was examined. This was done because the agencies involved in the effort were interested in discerning the extent to which knowledge of population size and change alone were sufficient to predict AFDC recipients and change in the number of recipients in counties. If population size and change allowed for adequate projections, then the task of projecting need could be simplified. The results of these four models are shown in Table 2.

In terms of the cross-sectional models for 1980 and 1990, the results suggest that total population is a generally good predictor of the number of AFDC enrollees, as might be expected. In both 1980 and 1990, the all counties model using population size alone explained at least 89 percent of the

variation in the number of enrollees in Texas Counties. It appears that estimates of AFDC might thus be approximated for current periods with current data on population size. This is less true in nonmetropolitan than in metropolitan counties, however. In nonmetropolitan counties the percent of variation explained is only 62 percent in 1980 and 72 percent in 1990 compared to more than 87 percent in metropolitan counties in 1980 and 91 percent in 1990.

The results for the model showing the regression of 1980-90 change in AFDC on 1980 variable values and the model showing the regression of percent change in AFDC enrollment from 1980 to 1990 on percent change in population from 1980 to 1990 suggest that population and population change alone do not provide adequate predictions of the percentage change in the number of recipients in either metropolitan or nonmetropolitan counties with the multiple coefficients of determination being not more than one percent in all models involving percentage change in AFDC enrollment.

Having indicated the relative utility of utilizing population size and change in size alone as predictors of the number of AFDC recipients, the next phase of the analysis involved examining the extent to which indicators of each of the POET variables were predictive of the number and percent change in the number of AFDC recipients. Such examinations of individual POET variable sets was again employed in the search for a parsimonious prediction model. These results are shown in Tables 3-6.

The data in Table 3 suggest that population size is again an excellent predictor of the total number of AFDC recipients but also shows that, in 1980, the percent of the population that is Black or Hispanic and the percent of male householders, and in 1990, the percent of female householders, were also important predictors of the number of recipients in both metropolitan and nonmetropolitan areas. For both the 1980 and 1990 cross-sectional models, the

multiple coefficients of determination exceeded 79 percent indicating generally excellent predictive abilities.

The models showing the effects on percent change in the number of recipients from 1980 to 1990 of population indicators in 1980 and 1980 to 1990 percentage change in the independent variables in Table 3 further indicate that change in household composition variables from 1980 to 1990 were important indicators of change in the number of AFDC recipients. These data also suggest that population variables are less adequate predictors of change than of the number of AFDC enrollees. Thus the multiple coefficients of determination are substantially less (roughly one-third of the magnitude) for the change than for the cross-sectional models. The only major difference between the patterns for metropolitan and nonmetropolitan areas lies in the importance of the percentage of the county's population that is urban which has an inverse relationship to change in AFDC enrollment.

The data in Table 4 show results for organizational indicators. The data in this table suggest that organizational variables are relatively poor predictors of AFDC enrollment in either 1980 or 1990. Multiple coefficients of determination are less than 15 percent in the total models and only 39 percent in the best submodel. The percent of the labor force employed in retail and wholesale trade is related to AFDC in the total and nonmetropolitan models, and several additional indicators show the expected patterns, particularly in nonmetropolitan counties. Thus, increases in manufacturing employment and in employment in trade are inversely related to AFDC change suggesting that expanding economies reduce the need for AFDC. In the change models a few variables are significant but the R^2 values are very low with such values never exceeding more than 26 for any of the six submodels. Overall, then, the results suggest that organizational changes play relatively minor roles in the determination of AFDC enrollment.

Table 5 provides results for environmental variables. The results in this table suggest more differences between metropolitan and nonmetropolitan counties. Only for the 1980 cross-sectional model and the model examining 1980 to 1990 percentage change for independent and dependent variables is even a single environmental variable of significance for explaining AFDC enrollment or change in enrollment in metropolitan counties. On the other hand, for nearly all of the nonmetropolitan models several income, education and employment variables are significant and related to AFDC and change in AFDC in the expected manner. Although it is difficult to know what factors may be responsible for the differences in patterns between metropolitan and nonmetropolitan counties, the results suggest that service needs and programs may reflect quite different factors in nonmetropolitan compared to metropolitan areas. Despite such differences the results suggest that these variables are relatively poor predictors of AFDC enrollment and change in enrollment with the percent of variation explained being greater than 35 percent for only one of the 12 models and 15 percent or less for 7 of the 12 models.

The technological model is limited to a single independent variable, metropolitan versus nonmetropolitan status. Although this status clearly involves differences in addition to technologically based access, the results show metropolitan/nonmetropolitan status to be a significant predictor of AFDC and of change in AFDC in three of the four models. Again, however, the explained variation does not exceed 16 percent in any of the models.

The results of the analysis of independent POET variables suggest that population variables are clearly the most important predictors of both AFDC enrollment in 1980 and 1990 and of change in AFDC enrollment over time; however, the variation explained in the percentage change models is substantially less than in the cross-sectional models. In fact, in the change

models it is apparent that although levels of explained variation are generally low, it is organizational, environmental and technological variables that are more likely to be significant than population variables.

As a further step in the analysis, those variables that were significant in the individual POET variable's analyses were entered into a combined analysis and stepwise regression using forward selection (and a 0.50 significance level) used to determine the variables that were most important in the projection of AFDC enrollment and change in enrollment. The results of this analysis are shown in Table 7. The data shown in this table include the order of entrance of each variable into the model, its unstandardized regression coefficient, the contribution of each variable to the total variation explained, the cumulative explained variation for the total model and the statistical significance level of each variable.

The results of this analysis show that for the cross-sectional models, population variables including total population and the percent of the population that is Black or Hispanic and, to a much less extent the environmental variables of median family income (in the 1980 model), per capita income increase (in the 1990 model) and the population variable of the percent of female householder households (in the 1990 model), were the best predictors of the level of AFDC enrollment in both metropolitan and nonmetropolitan areas. In fact, nearly all of the variation explained was explained by population size alone.

For the change models, the results reflect earlier findings in that levels of explained variation are, in general, lower than for the two cross-sectional models. The results also suggest, however, that the range of variables of importance in explaining the percentage change in AFDC is much greater. Numerous environmental and organizational variables have significant effects on the percentage change in AFDC in both change models and for both

metropolitan and nonmetropolitan areas. These models suggest that population size may largely predict AFDC enrollment at a given point in time but that changes in enrollment is a function of a wider range of factors.

As a further means of examining the ecological determinants of AFDC enrollment, we examined total models in which all variables were potentially included. Because of problems of multicollinearity it was necessary to exclude some variables from the analysis but the extent to which the variables as a whole allow one to project AFDC enrollment and change in AFDC enrollment can be determined by examining the models shown in Tables 8-11.

A comparison of the data in the all counties models in Tables 8 and 9 for the cross-sectional models for 1980 and 1990, indicates that in both 1980 and 1990, the total population is, as expected, a significant predictor of AFDC enrollment. In 1990, however, the percent of persons in the Other racial category, the percent of persons under 18, median household income, and the percent of persons in poverty were also significant predictors suggesting the role of such factors in the selection of AFDC recipiency by 1990. As noted in previous models, the results suggest that a larger number of factors played a significant role in determining AFDC enrollment in nonmetropolitan than in metropolitan areas. In fact, only population was a significant predictor of AFDC enrollment in the metropolitan models for either 1980 or 1990 while several other socioeconomic variables were significant in both the 1980 and 1990 nonmetropolitan models.

For the all counties models of percent change in AFDC from 1980 to 1990 (see Tables 10 and 11), the results suggest that changes in minority populations, in household composition, and in the basic economies of counties also played a role in the change in AFDC enrollment from 1980 to 1990. Thus in the model showing the regression on 1980-90 change in AFDC on 1980 conditions, not only was the percent of Black or Hispanic residents related to

AFDC change significant but also the percent of persons less than 18 years of age, the percent of male householder households, percent employed in mining, and the percent employed in retail and wholesale trade. In fact, it was variables similar to the latter, rather than total population, that were the significant predictors of change in AFDC in nonmetropolitan and metropolitan counties. In the final model showing percent change 1980-90 in AFDC on percent change 1980 to 1990 for the independent variables, changes in the organization of Texas counties was again important in determining AFDC change. In the total (the all counties) model, as well as in its metropolitan and nonmetropolitan submodels, however, the most important variable was the growth in the Black and Hispanic populations of the counties.

As a final means of evaluating the effects of the ecological variables and the relative importance of different ecological variables in the determination of AFDC enrollment and percent change in AFDC enrollment, stepwise regressions were completed on the data included in Table 8-11. The results of these regressions are reported in Table 12 for the total model only. The components of this table are similar to those shown in Table 7.

The data in Table 12 clearly show that total population is the key determinant of total AFDC enrollment in 1980 and 1990. Only the percent of the population that was Black or Hispanic in 1980 and median household income in 1990, contributed as much as 1 percent to the total model multiple coefficient of determination. Given multiple coefficients of determination of more than 88 percent, the relative importance of population change is evident.

In regard to the change model using 1980 status variables as independent variables, the results indicate that persons in poverty, sustenance activities related to mining and trade were related to change in AFDC enrollment. In the final model showing change in AFDC from 1980 to 1990 on change in the values of independent variables, the results show that the percent change in the

Black and Hispanic population from 1980 to 1990, percent of high school graduates and percent of households with a female householder were the major determinants of percent change in AFDC enrollment.

Conclusions and Implications

In this analysis we have attempted to explain the levels of AFDC enrollment in 1980 and 1990 and 1980 to 1990 change in AFDC enrollment in counties in Texas with attention being given to metropolitan and nonmetropolitan differences. We have attempted to both identify the most parsimonious models for predicting AFDC enrollment levels and change and the relationship of key ecological dimensions to such levels and change. Viewed in terms of ecological theory, use of AFDC can be seen involving persons and households adaptations to sustenance and environmental bases to which they have not had access or which are simply incapable of supporting them. As such, the heuristic categories of the POET variables can be used to suggest how ecological factors may be expected to affect AFDC enrollment. In this framework, metropolitan and nonmetropolitan statuses were seen as indicating technological accessibility.

Results of both multilinear ordinary least squares and stepwise regressions show several general patterns. Thus, in general, population factors were the dominant variables in explaining the number of AFDC enrollees with other dimensions playing much less important predictive roles. In the change models, population characteristic, such as change in minority populations and a wider array of environmental and organization variables played more important roles in predicting change in AFDC enrollment. The ability to predict cross-sectional levels of AFDC was much better than the ability to explain change in AFDC, with explained variation in the cross-sectional models generally exceeding 85 percent while that for change models only exceeded 50 percent in one model and generally did not exceed 35 percent.

Similarly, it was evident that in most instances the factors significantly related to AFDC enrollment were more varied in size and conceptual bases in the 1990 than in the 1980 models. Finally, it was evident that the significant predictors of AFDC were likely to be more varied in number and to represent more varied conceptual dimensions in nonmetropolitan than in metropolitan areas.

Any interpretation of these findings must be tempered by the limitations of the study. Its limitation to a single state, its examination of change over a single time period (1980 to 1990), its inclusion of only aggregate versus variables specific to the AFDC recipients themselves, clearly affect the validity and generalizability of the findings from the study. Despite such limitations, we believe the results have both applied and theoretical implications of importance to policy analysts, rural sociologists and other scholars.

Pragmatically, the results suggest that having data on population factors may allow one to quite accurately predict levels of AFDC usage. The results support the substantial predictive power of basic demographic factors for predicting period specific AFDC enrollment. Data on total population and the ethnic composition of the population allowed for quite accurate predictions of levels of AFDC enrollment in both 1980 and 1990. On the other hand, the results also suggest that levels of change in AFDC usage over time are not necessarily predicted well by the use of population dimensions alone. The prediction of change is both less adequate and less parsimoniously completed. Rather, it is evident that factors describing change in the socioeconomic environment and organizational changes, such as changes in general levels of income in an environment and economic growth in general trade and business sectors of areas' sustenance organizations, are useful additional predictors of change in AFDC.

Such findings may at first seem to be of limited utility for program administrators because among their most difficult but essential tasks is that of anticipating future levels of need, but the data on population variables that may allow for accurate projections of current need are nearly as difficult to measure accurately as AFDC levels themselves. In addition, it is evident that to know how levels of AFDC need will change over time, it may be necessary to also obtain information to predict change in socioeconomic levels and economies impacting the populations of interest, projections at least as challenging as those of projecting populations.

Such findings may, however, mark a step toward easing the task of the program administrator in that they suggest that although multifaceted, the determinants of growth in AFDC, in this analysis at least, did not reflect the full array of variables included in the analysis. Since the variables included in the study generally were selected to reflect factors hypothesized from past findings to be significant in AFDC growth, it appears that it is not necessary to be able to predict as wide an array of conditions and events as has sometimes been maintained (Piskulich 1993). For example, the change in household composition toward single parent households, although sometimes significant was not as dominant a variable as has sometimes been suggested (Lichter and Eggebeen 1992). Similarly, changes in the basic economies of areas did impact predictions, but again the impacts are more limited than some might have maintained (see Wilson 1987). The results of this analysis may thus be useful in beginning the process of narrowing the scope of factors that one may need to examine to project AFDC enrollment.

Other results of this, and subsequent analysis, may also prove of utility to policy administrators. The fact that predicting trends in 1990 is more complex than those for 1980 may suggest that enrollment is reflecting a wider array of demographic and socioeconomic realities because of an expanding

base of need. This suggests that the need is growing faster than its demographic base and that factors responsible for this growth must be identified if needs are to be met and the growth of program demands more adequately managed. Similarly, the finding that metropolitan and nonmetropolitan differences remain significant and that in nometropolitan areas program participation is more likely to be increased by basic economic changes suggests that maintaining programs that recognize rural-urban differences remains important.

For the development of a human ecological perspective on program usage, the findings also have several implications. First, the results in many ways support the utility of an ecological perspective. Thus as noted above, in ecological terms, population is expected to be the reactive part of the ecological complex, reflecting changes in environmental, organizational and technological factors. The fact that population was the best predictor of cross-sectional patterns of AFDC enrollment is suggestive of this hypothesized adaptive relationship between a population and the state of affairs in an ecosystem. Similarly, the fact that change in AFDC was not effectively predicted by population factors suggests that organizational and environmental dimensions provide the impetus for change, as predicted by ecological theory. Such findings are therefore supportive of the view that ecological theory may be useful for explaining service usage patterns.

An ecological perspective also suggests that the predictive ability of population dimensions in 1980 and 1990 likely reflect the fact that the population base had adapted to existing environmental and organizational dimensions at each of these points in time. Population is likely to be a good predictor of AFDC enrollment only if such dimensions are in a relatively stable condition. When they are not, population is unlikely to adequately reflect AFDC levels. Therefore ecological theory would suggest that if rapid

organizational and environmental changes are occurring a project administrator would be wise to be careful in using population alone to project AFDC usage. The current climate of welfare reform may thus make the use of population increasingly precarious until conditions have stabilized.

The differences evident between metropolitan and nonmetropolitan areas also reflect patterns that would be predicted on the basis of ecological theory. The technological differences between such areas should result in differences in service usage. In addition, the fact that the economies of nonmetropolitan areas are much less diversified suggests, as the findings tend to support, that nonmetropolitan populations must adapt relatively quickly to changes in basic economic sectors of the economy. The fact that changes in sustenance organization were more strongly related to change in AFDC enrollment in nonmetropolitan populations indicates that the fragile economies of many nonmetropolitan areas may leave nonmetropolitan residents with few alternatives in adapting to such change and require them to seek forms of assistance relatively soon after economic decline and allow them to access economic growth soon after it begins. The metropolitan/nonmetropolitan differences noted in the findings reflect ecological-based expectations.

The fact that the environmental and organizational dimensions explained a relatively small part of the variation in change in AFDC enrollment suggests that other organizational, environmental and technological dimensions should be included in further analysis. For example, it is likely that organizational dimensions related to program operation and management are important determinants of enrollment levels. Similarly, the specific environment of the family or household involved in AFDC programs must be considered. Finally, it is evident that including characteristics of individual program recipient households is likely to be important as a means of taking into account the somatic forms of adaptation likely to influence

overall levels of enrollment. As such we are suggesting, as have Garrett et al. (1994), that combining individual and ecological factors may be necessary in order to more fully understand determinants of need. The results are generally supportive of an ecological perspective but also suggest that such a framework must be expanded considerably if it is to be used to adequately project change in levels of program usage.

Overall, then, the results are promising but clearly preliminary. For both policy and conceptual reasons, much additional work must be done inclusive of more dimensions for more areas and for additional time periods. Participation in human service programs is likely to require modelling of complex social, organizational, individual and institutional interrelationships. Whether for urban or rural areas, understanding such phenomena is likely to require the best efforts of social scientists both to improve our ability to project such participation but more importantly to improve the level of human services in both urban and rural areas.

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Table 1

Variables Included in the Analysis of Texas
AFDC Enrollment by POET Variable Classification

Dependent Variables

Number of AFDC recipients in 1980
Number of AFDC recipients in 1990
Change in AFDC recipients, 1980-1990
Percent change in AFDC recipients, 1980-1990

Independent Variables*

Population Variables

County population, 1980
County population, 1990
County population change, 1980-1990
Percent county population change, 1980-1990
Percent of county population urban, 1980
Percent of county population rural, 1980
Percent of county population urban, 1990
Percent of county population rural, 1990
Percent Anglo population, 1980
Percent Anglo population, 1990
Percent Black and Hispanic population, 1980
Percent Black and Hispanic population, 1990
Percent Other population, 1980
Percent Other population, 1990
Median age, 1980
Median age, 1990
Percent of population under 18 years, 1980
Percent of population under 18 years, 1990
Percent of population 65 years of age and older, 1980
Percent of population 65 years of age and older, 1990
Percent married-couple households, 1980
Percent married-couple households, 1990
Percent male householders (no wife present), 1980
Percent male householders (no wife present), 1990
Percent female householders (no husband present), 1980
Percent female householders (no husband present), 1990
Percent nonfamily households, 1980
Percent nonfamily households, 1990
Percent never married, 1980
Percent never married, 1990
Percent now married, 1980
Percent now married, 1990
Percent separated, 1980
Percent separated, 1990
Percent widowed, 1980
Percent widowed, 1990
Percent divorced, 1980
Percent divorced, 1990

Table 1 (continued)

Organization Variables

Percent of workforce employed in trade, 1980
Percent of workforce employed in trade, 1990
Percent of workforce employed in agriculture, 1980
Percent of workforce employed in agriculture, 1990
Percent of workforce employed in mining, 1980
Percent of workforce employed in mining, 1990
Percent of workforce employed in construction, 1980
Percent of workforce employed in construction, 1990
Percent of workforce employed in manufacturing, 1980
Percent of workforce employed in manufacturing, 1990
Percent of workforce employed in services, 1980
Percent of workforce employed in services, 1990
Percent of workforce employed in government, 1980
Percent of workforce employed in government, 1990
Index of surplus workers, 1980 (see Murdock et al. 1993)
Division of labor, 1980 (see Murdock et al. 1993)
Specialization in declining industries, 1980 (see Murdock et al. 1993)

Environment Variables

Median household income, 1980
Median household income, 1990
Median family income, 1980
Median family income, 1990
Per capita income, 1980
Per capita income, 1990
Percent of persons in poverty, 1980
Percent of persons in poverty, 1990
Labor force participation rate, 1980
Labor force participation rate, 1990
Female unemployment rate, 1980
Female unemployment rate, 1990
Male unemployment rate, 1980
Male unemployment rate, 1990
Percent of persons employed, 1980
Percent of persons employed, 1990
Percent high school graduates, 1980
Percent high school graduates, 1990

Technology Variables

Accessibility measured by metro/nonmetro status

*Independent variables were used in their percentage form in the 1980 and 1990 cross-sectional models and in the 1980-90 percentage change in AFDC model on 1980 variable values. For the 1980 to 1990 change models, 1980-90 change in independent variables involved percentage changes in the number involved from 1980 to 1990.

Table 2

Unstandardized[+] and Standardized Regression Coefficients and Multiple Coefficients of Determination (R^2) for the Regression of the Number of AFDC Recipients or the 1980-90 Percent Change in AFDC Recipients on Population Size and Percent Change in Population Size in Texas Counties by Metropolitan/Nonmetropolitan Status

	All Counties		Metropolitan		Nonmetropolitan	
Variable	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Model 1: 1980 AFDC on 1980 Population						
Intercept	49.07	0.00	173.41	0.00	-21.58	0.00
Total population 1980	0.02*	0.94	0.02*	0.93	0.02*	0.79
R^2	0.89	--	0.87	--	0.62	--
Model 2: 1990 AFDC on 1990 Population						
Intercept	-113.00	0.00	-626.07	0.00	-16.39	0.00
Total population 1990	0.04*	0.96	0.04*	0.00	0.04*	0.85
R^2	0.93	--	0.91	--	0.72	--
Model 3: Percent Change 1980-90 AFDC on 1980 Population						
Intercept	106.78*	0.00	133.78*	0.00	105.69*	0.00
Total population 1980	0.00	0.02	-0.00	-0.06	-0.00	-0.03
R^2	0.001	--	0.004	--	0.001	--
Model 4: Percent Change 1980-90 AFDC on Percent Change Population 1980-90						
Intercept	102.68*	0.00	127.62*	0.00	99.69*	0.00
Percent change population 1980-90	0.62	0.11	0.12	0.04	0.63	0.09
R^2	0.01	--	0.001	--	0.01	--

[+] In several cases, an unstandardized coefficient of 0.00 or -0.00 is shown. In all cases, these were non-zero values which rounded to 0.00. The sign was retained to provide an indication of the nature of the relationship.

* Indicates value is statistically significant at the level of 0.05 or less.

Table 3

Unstandardized[+] and Standardized Regression Coefficients and Adjusted Multiple Coefficients of Determination (R^2) for the Regression of the Number of AFDC Recipients or the 1980-90 Percent Change in AFDC Recipients on Selected Population Indicators for Texas Counties by Metropolitan/Nonmetropolitan Status

Variable	All Counties		Metropolitan		Nonmetropolitan	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Model 1: 1980 AFDC on Selected 1980 Population Indicators						
Intercept	-9035.29	0.00	3840.08	0.00	-1090.63*	0.00
Total population, 1980	0.02*	0.94	0.02*	0.91	0.02*	0.74
Percent of persons Black or Hispanic, 1980	19.77*	0.09	178.95*	0.38	5.00*	0.29
Percent urban, 1980	-1.33	-0.01	-44.51	-0.10	-1.41*	-0.11
Percent of persons under 18 years of age, 1980	20.63	0.03	-36.58	-0.02	6.09	0.12
Percent female householders, (no husband present), 1980	81.33	0.04	69.91	0.02	21.75*	0.14
Median age, 1980	50.48	0.06	--	--	5.60	0.09
Percent married couple households, 1980	52.03	0.06	--	--	2.61	0.04
Percent male householders (no wife present), 1980	-42.34	-0.01	-3892.30*	-0.16	-0.78	0.00
Percent of persons never married, 1980	36.72	0.04	--	--	--	--
Percent of persons separated, 1980	76.58	0.01	--	--	71.81*	0.11
Percent of persons widowed, 1980	80.48	0.05	--	--	10.73	0.08
Percent of persons divorced, 1980	104.25	0.03	656.90	0.10	6.61	0.02
Adjusted R^2	0.90	--	0.91	--	0.79	--

Table 3 (continued)

Variable	All Counties		Metropolitan		Nonmetropolitan	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Model 2: 1990 AFDC on Selected 1990 Population Indicators						
Intercept	-2964.12	0.00	-9674.59	0.00	-372.00	0.00
Total population, 1990	0.04*	0.98	0.04*	0.95	0.03*	0.80
Percent of persons Black/ Hispanic, 1990	18.37	0.04	135.92	0.14	4.35*	0.16
Percent urban, 1990	-10.52	-0.03	-57.73	-0.06	-1.43*	-0.07
Percent of persons under 18 years of age, 1990	-46.39	-0.02	-73.64	-0.01	5.93	0.04
Percent of persons separated, 1990	-270.48	-0.02	--	--	94.38*	0.10
Percent of persons divorced, 1990	-222.06	-0.04	-222.95	-0.02	-43.04*	-0.10
Percent male householders (no wife present), 1990	42.32	0.00	-1221.12	-0.03	-9.73	-0.02
Percent female householders (no husband present), 1990	291.18*	0.09	663.93	0.09	38.96*	0.20
Percent married couple households, 1990	54.42	0.03	--	--	--	--
Median age, 1990	--	--	30.75	0.04	--	--
Percent of persons now married, 1990	--	--	--	--	-0.75	-0.01
Adjusted R^2	0.93	--	0.93	--	0.87	--

Table 3 (continued)

Variable	All Counties		Metropolitan		Nonmetropolitan	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
	Model 3: Percent Change 1980-90 AFDC on Selected 1980 Population Indicators					
Intercept	241.32	0.00	612.52	0.00	284.10	0.00
Total population, 1980	--	--	-0.00	-0.20	-0.00	-0.11
Percent of persons Black/ Hispanic, 1980	-1.63*	-0.29	-0.53	-0.12	-2.75*	-0.48
Percent urban, 1980	0.51	0.13	0.99	0.24	0.64*	0.15
Percent of persons under 18 years of age, 1980	0.46	0.03	-5.28	-0.33	1.42	0.08
Percent male householders (no wife present), 1980	15.08	0.09	100.28*	0.46	10.20	0.06
Percent female householders (no husband present), 1980	3.24	0.07	1.59	0.04	6.85	0.13
Percent married couple households, 1980	-0.00	-0.06	--	--	-1.23	-0.05
Percent of persons separated, 1980	-27.23	-0.13	-51.50	-0.28	-18.52	-0.08
Percent of persons never married, 1980	-3.07	-0.14	-9.41*	-0.70	--	--
Percent of persons widowed, 1980	-12.93*	-0.30	-31.22*	-0.59	-14.25*	-0.30
Percent of persons divorced, 1980	6.42	0.08	--	--	--	--
Adjusted R^2	0.13	--	0.28	--	0.10	--

Table 3 (continued)

Variable	All Counties		Metropolitan		Nonmetropolitan	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Model 4: Percent Change 1980-90 AFDC on Percent Change 1980-90 in Selected Population Indicators						
Intercept	60.98*	0.00	78.32	0.00	100.94	0.00
AFDC recipients, 1980	-0.00	-0.06	-0.00*	-0.22	-0.09*	-0.29
Percent change in population, 1980-90	-1.91*	-0.37	--	--	--	--
Percent change in urban population, 1980-90	-0.00	-0.06	-0.96	-0.39	-0.00	-0.07
Percent change in Black/ Hispanic persons 1980-90	1.85*	0.59	2.37*	0.96	1.18*	0.34
Percent change in persons under 18 years of age, 1980-90	--	--	-4.43*	-0.80	1.00	0.10
Percent change in persons 65 years of age and older, 1980-90	--	--	4.95*	0.65	-1.12	-0.11
Percent change in male householders, 1980-90	-0.09	-0.07	-0.11	-0.07	-0.10	-0.09
Percent change in female householders, 1980-90	0.66*	0.22	0.74	0.29	0.83*	0.25
Percent change in persons never married, 1980-90	--	--	--	--	0.02	0.00
Percent change in persons separated, 1980-90	0.02	0.01	--	--	-0.02	-0.01
Percent change in persons widowed, 1980-90	0.97	0.14	--	--	0.22	0.03
Percent change in persons divorced, 1980-90	-0.45	-0.18	--	--	-0.55*	-0.20
Percent change in median age, 1980-90	1.79	0.10	-3.63	-0.15	3.30	0.19
Percent change in nonfamily households, 1980-90	--	--	-0.56	-0.27	--	--
Adjusted R^2	0.21	--	0.52	--	0.20	--

+ In several cases, an unstandardized coefficient of 0.00 or -0.00 is shown. In all cases, these were non-zero values which rounded to 0.00. The sign was retained to provide an indication of the nature of the relationship.

* Indicates value is statistically significant at the level of 0.05 or less.

Table 4

Unstandardized+ and Standardized Regression Coefficients and Adjusted Multiple Coefficients of Determination (R^2) for the Regression of the Number of AFDC Recipients or the 1980-90 Percent Change in AFDC Recipients on Selected Organizational Indicators for Texas Counties by Metropolitan/Nonmetropolitan Status

	All Counties		Metropolitan		Nonmetropolitan	
Variable	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Model 1: 1980 AFDC on Selected 1980 Organizational Indicators						
Intercept	3969.41	0.00	-65541.00	0.00	-84.30	0.00
Percent employed in mining, 1980	15.88	0.03	-428.28	-0.18	3.84	0.08
Percent employed in construction, 1980	-19.94	-0.01	-278.31	-0.07	5.80	0.06
Percent employed in manufacturing, 1980	62.46	0.11	--	--	20.34*	0.47
Percent employed in services, 1980	123.56	0.13	72.03	0.04	13.62	0.17
Percent employed in retail/ wholesale trade, 1980	216.16*	0.16	-293.88	-0.08	19.95*	0.18
Percent employed in government, 1980	-2.10	-0.00	-543.74	-0.35	27.76*	0.42
Division of labor index, 1980	-1293.00	0.09	57580.00	0.11	-1474.00	-0.14
Index of surplus worker, 1980	2094.17	0.09	39647.00	0.21	386.99*	0.23
Index of declining industries, 1980	-2004.56	-0.08	-34926.00	-0.38	45.21	0.02
Percent employed in agriculture, 1980	--	--	-64.30	-0.01	--	--
R^2	0.08	--	0.23	--	0.39	--

Table 4, (continued)

Variable	All Counties		Metropolitan		Nonmetropolitan	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Model 2: 1990 AFDC on Selected 1990 Organizational Indicators						
Intercept	88459.00*	0.00	16147.00	0.00	524.66	0.00
Percent employed in agriculture, 1990	-729.93*	-0.65	-2002.71	-0.14	-21.24	-0.30
Percent employed in mining, 1990	-568.73*	-0.34	-1521.68	-0.23	-16.49	-0.17
Percent employed in construction, 1990	-864.34*	-0.21	1369.27	0.15	-28.26	-0.11
Percent employed in manufacturing, 1990	-645.43*	-0.46	-1128.60	-0.30	14.38	0.17
Percent employed in services, 1990	-84.54	-0.04	-128.16	-0.03	12.09	0.09
Percent employed in retail/ wholesale trade, 1990	-394.46	-0.14	-478.86	-0.05	20.52	0.12
Percent employed in government, 1990	-429.46*	-0.26	-1301.88	-0.40	24.99*	0.25
Division of labor index, 1980	-49078.00	-0.17	-18489.00	-0.02	-1357.15	0.08
Index of surplus worker, 1980	3584.36	0.07	76518.00	0.19	697.41*	0.25
Index of declining industries, 1980	-3539.37	-0.07	-67688.00	-0.34	152.54	0.05
R^2	0.14	--	0.26	--	0.38	--

Table 4, (continued)

Variable	All Counties		Metropolitan		Nonmetropolitan	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
	Model 3: Percent Change 1980-90 AFDC on Selected 1980 Organizational Indicators					
Intercept	-9.89	0.00	21.97	0.00	-189.08	0.00
Percent employed in mining, 1980	3.98*	0.25	2.51	0.12	--	--
Percent employed in construction, 1980	0.11	0.00	19.88*	0.54	-2.87	-0.09
Percent employed in manufacturing, 1980	-0.69	-0.05	--	--	-3.11*	-0.21
Percent employed in services, 1980	2.75	0.11	6.83	0.41	-0.43	-0.02
Percent employed in retail/ wholesale trade, 1980	8.15*	0.23	18.11*	0.54	4.36	0.11
Percent employed in government, 1980	-2.91	-0.14	-3.43	-0.24	-3.47	-0.16
Division of labor index, 1980	-45.34	-0.01	-533.29	-0.107	399.47	0.09
Index of surplus worker, 1980	-46.73	-0.07	-95.56	-0.05	-55.77	-0.09
Index of declining industries, 1980	72.11	0.11	60.83	0.07	166.99*	0.25
Percent employed in agriculture, 1980	--	--	-4.80	-0.12	--	--
R^2	0.13	--	0.26	--	0.11	--

Table 4, (continued)

Variable	All Counties		Metropolitan		Nonmetropolitan	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Model 4: Percent Change 1980-90 AFDC on Percent Change 1980-90 in Selected Organizational Indicators						
Intercept	104.36*	0.00	103.10*	0.00	129.01*	0.00
AFDC recipients, 1980	-0.00	-0.04	-0.00	-0.19	-0.08*	-0.23
Percent change in employment in government, 1980-90	-0.61	-0.15	-0.29	-0.09	-0.70	-0.16
Percent change in employment in services, 1980-90	0.96*	0.28	1.28	0.57	0.77	0.19
Percent change in employment in retail/wholesale trade, 1980-90	-0.86*	-0.23	-0.70	-0.28	-0.78*	-0.18
Percent change in employment in manufacturing, 1980-90	-0.06	-0.05	-0.26	-0.09	-0.06	-0.06
Percent change in employment in construction, 1980-90	0.73*	0.17	-0.87	-0.20	0.78*	0.19
Adjusted R^2	0.06	--	0.09	--	0.12	--

+ In several cases, an unstandardized coefficient of 0.00 or -0.00 is shown. In all cases, these were non-zero values which rounded to 0.00. The sign was retained to provide an indication of the nature of the relationship.

* Indicates value is statistically significant at the level of 0.05 or less.

Table 5

Unstandardized+ and Standardized Regression Coefficients and Adjusted Multiple Coefficients of Determination (R^2) for the Regression of the Number of AFDC Recipients or the 1980-90 Percent Change in AFDC Recipients on Selected Environmental Indicators for Texas Counties by Metropolitan/Nonmetropolitan Status

	All Counties		Metropolitan		Nonmetropolitan	
Variable	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Model 1: 1980 AFDC on Selected 1980 Environmental Indicators						
Intercept	-24192.00*	0.00	-75002.00*	0.00	1249.74*	0.00
Median family income, 1980	0.31*	0.23	0.08	0.03	--	--
Percent of persons in poverty, 1980	202.19*	0.33	546.51	0.38	-1.36	-0.03
Labor force participation rate, 1980	92.21	0.13	454.74	0.40	-11.08*	-0.19
Percent of females unemployed, 1980	-60.83	-0.04	110.36	0.02	-3.35	-0.03
Percent of males unemployed, 1980	541.14*	0.27	2151.36	0.40	52.53*	0.34
Percent high school graduates, 1980	165.21	0.35	479.21*	0.44	-6.20	-0.13
Per capita income, 1980	--	--	--	--	-0.05*	-0.22
Median household income, 1980	--	--	--	--	0.03*	0.19
Adjusted R^2	0.15	--	0.20	--	0.29	--

Table 5 (continued)

Variable	All Counties		Metropolitan		Nonmetropolitan	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Model 2: 1990 AFDC on Selected 1990 Environmental Indicators						
Intercept	-46835.00*	0.00	-212037.00*	0.00	-1232.96	0.00
Per capita income, 1990	1.27*	0.29	4.63	0.64	-0.09*	-0.29
Median family income, 1990	--	--	--	--	0.05*	0.37
Percent of persons in poverty, 1990	274.16*	0.24	216.26	0.08	9.90	0.14
Percent of males unemployed, 1990	533.46*	0.18	5031.19	0.57	54.85*	0.33
Percent of females unemployed, 1990	258.06	0.08	4450.51	0.52	55.14*	0.31
Labor force participation rate, 1990	253.02*	0.17	946.05	0.34	-3.77	-0.04
Percent high school graduates, 1990	157.66	0.15	499.62	0.20	12.78	0.18
Adjusted R^2	0.12	--	0.18	--	0.36	--
Model 3: Percent Change 1980-90 AFDC on Selected 1980 Environmental Indicators						
Intercept	136.49	0.00	257.39	0.00	194.11	0.00
Per capita income, 1980	-0.02*	-0.21	--	--	-0.03*	-0.23
Percent of persons in poverty, 1980	-4.71*	-0.30	-1.82	-0.14	-5.49*	-0.33
Labor force participation rate, 1980	0.74	0.04	-2.29	-0.22	0.20	0.01
Percent of females unemployed, 1980	0.44	0.01	-19.99	-0.48	1.76	0.04
Percent of males unemployed, 1980	-1.70	-0.03	7.41	0.15	-1.84	-0.04
Percent high school graduates, 1980	2.58*	0.21	1.24	0.13	3.00*	0.19
Median household income, 1980	--	--	0.00	0.13	--	--
Adjusted R^2	0.11	--	0.10	--	0.10	--

Table 5 (continued)

Variable	All Counties		Metropolitan		Nonmetropolitan	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Model 4: Percent Change 1980-90 AFDC on Percent Change 1980-90 in Selected Environmental Indicators						
Intercept	89.11	0.00	-29.93	0.00	180.92*	0.00
AFDC recipients 1980	-0.00	-0.09	-0.00	-0.17	-0.09*	-0.27
Percent change in median family income, 1980-90	-2.00	-0.30	-0.95	-0.20	-2.36	-0.33
Percent change in per capita income, 1980-90	0.01	0.18	--	--	0.01	0.15
Percent change in median household income, 1980-90	0.57	0.09	--	--	0.94	0.15
Percent change in persons in poverty, 1980-90	-1.35	-0.12	-2.25	-0.26	-0.51	-0.04
Percent change in high school graduates, 1980-90	-1.68*	-0.44	-0.63	-0.24	-1.48*	-0.33
Percent change in female civilian labor force, 1980-90	0.43	0.11	--	--	-0.02	-0.00
Percent change in male civilian labor force, 1980-90	1.80*	0.39	--	--	2.30*	0.38
Percent change in unemployed females, 1980-90	-0.11	-0.11	0.71*	0.50	-0.12	-0.13
Percent change in unemployed males, 1980-90	0.02	0.03	-0.01	-0.01	0.01	0.01
Adjusted R^2	0.06	--	0.16	--	0.10	--

Table 6

Unstandardized+ and Standardized Regression Coefficients and Adjusted Multiple Coefficients of Determination (R^2) for the Regression of the Number of AFDC Recipients or the 1980-90 Percent Change in AFDC Recipients on the Technology Indicator of Metropolitan Status for Texas Counties

	All Counties	
Variable	Unstandardized	Standardized
Model 1: 1980 AFDC on Selected 1980 Technology Indicators		
Intercept	329.01	0.00
Metropolitan status	4582.34*	0.41
Adjusted R^2	0.16	--
Model 2: 1990 AFDC on Selected 1990 Technology Indicators		
Intercept	560.19	0.00
Metropolitan status	9464.32*	0.40
Adjusted R^2	0.16	--
Model 3: Percent Change 1980-90 AFDC on Selected 1980 Technology Indicators		
Intercept	101.81*	0.00
Metropolitan status	29.04	0.10
Adjusted R^2	0.01	--
Model 4: Numerical Change 1980-90 AFDC on Technology Indicators		
Intercept	231.19	0.00
Metropolitan status	4881.98*	0.38
Adjusted R^2	0.14	--

+ In several cases, an unstandardized coefficient of 0.00 or -0.00 is shown. In all cases, these were non-zero values which rounded to 0.00. The sign was retained to provide an indication of the nature of the relationship.

* Indicates value is statistically significant at the level of 0.05 or less.

Table 7

Results from Stepwise Regression on the Number of AFDC Recipients or the 1980-90 Percent Change in AFDC Recipients of Selected Independent Variables for Texas Counties by Metropolitan/Nonmetropolitan Status

Variable	Order of Entrance	Parameter Estimate	Partial R^2	Model R^2	Probability > F
All Counties					
Model 1: 1980 AFDC on Selected Independent Variables for 1980					
Intercept		2297.85			
Total population, 1980	1	0.02	0.8877	0.8877	0.0001
Percent Black/ Hispanic, 1980	2	20.54	0.0106	0.8984	0.0001
Median family income, 1980	3	-0.15	0.0020	0.9004	0.0248
Metropolitan status, 1980	4	568.70	0.0016	0.9020	0.0473
Percent persons in poverty, 1980	5	-29.50	0.0004	0.9024	0.3035
Metropolitan					
Intercept		7383.50			
Total population, 1980	1	0.02	0.8668	0.8668	0.001
Percent Black/ Hispanic, 1980	2	128.04	0.0437	0.9105	0.0001
Percent male householders, 1980	3	-3419.78	0.0094	0.9200	0.0259
Percent high school graduates, 1980	4	-59.18	0.0016	0.9215	0.3510
Nonmetropolitan					
Intercept		-119.65			
Total population, 1980	1	0.02	0.6114	0.6114	0.0001
Percent Black/ Hispanic, 1980	2	4.88	0.1491	0.7604	0.0001
Percent female householders, 1980	3	20.87	0.0215	0.7819	0.0001
Percent urban, 1980	4	-1.32	0.0118	0.7937	0.0010
Percent of persons separated, 1980	5	55.31	0.0061	0.7999	0.0155
Percent males unemployed, 1980	6	11.21	0.0035	0.8034	0.0641
Percent employed in retail/wholesale trade, 1980	7	-5.62	0.0010	0.8044	0.3187
Median household income, 1980	8	-0.01	0.0013	0.8057	0.2513
Percent employed in government, 1980	9	-2.53	0.0012	0.8069	0.2859
Index of surplus workers, 1980	10	58.72	0.0007	0.8076	0.4124

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Table 7 (continued)

Variable	Order of Entrance	Parameter Estimate	Partial R^2	Model R^2	Probability > F
		All Counties			
Model 2: 1990 AFDC on Selected Independent Variables for 1990					
Intercept		5253.58			
Total population, 1990	1	0.04	0.9257	0.9257	0.0001
Per capita income, 1990	2	-0.43	0.0101	0.9358	0.0001
Percent employed in manufacturing, 1990	3	-35.47	0.0005	0.9363	0.1551
Percent employed in construction, 1990	4	106.57	0.0005	0.9368	0.1596
Percent female householders, 1990	5	148.25	0.0004	0.9373	0.2052
Labor force participation rate, 1990	6	-43.11	0.0002	0.9374	0.3890
Percent of persons in poverty, 1990	7	-41.22	0.0002	0.9376	0.3854
Percent employed in agriculture, 1990	8	42.82	0.0003	0.9379	0.2768
Metropolitan status, 1980	9	653.92	0.0003	0.9382	0.3089
Percent employed in mining, 1990	10	23.66	0.0001	0.9383	0.4883
		Metropolitan			
Intercept		-626.07			
Total population, 1990	1	0.04	0.9129	0.9129	0.0001
		Nonmetropolitan			
Intercept		-390.30			
Total population, 1990	1	0.03	0.7176	0.7176	0.0001
Percent Black/ Hispanic, 1990	2	3.82	0.1227	0.8404	0.0001
Percent female householders, 1990	3	34.75	0.0198	0.8602	0.0001
Percent of persons divorced, 1990	4	-50.11	0.0047	0.8649	0.0096
Percent of females unemployed, 1990	5	13.02	0.0035	0.8685	0.0231
Percent urban, 1990	6	-1.03	0.0026	0.8710	0.0516
Percent of persons separated, 1990	7	98.21	0.0024	0.8734	0.0554
Percent employed in government, 1990	8	3.74	0.0007	0.8742	0.2978
Median family income, 1990	9	-0.01	0.0004	0.8746	0.4339
Per capita income, 1990	10	0.03	0.0009	0.8755	0.2390

Table 7 (continued)

Variable	Order of Entrance	Parameter Estimate	Partial R^2	Model R^2	Probability > F
		All Counties			
Model 3: Percent Change, 1980-90 AFDC on Selected Variables for 1980					
Intercept		160.34			
Percent of persons in poverty, 1980	1	-1.09	0.1028	0.1028	0.0001
Percent employed in mining, 1980	2	4.62	0.0398	0.1426	0.0008
Percent employed in retail/ wholesale trade, 1980	3	7.30	0.0468	0.1894	0.0002
Percent of persons widowed, 1980	4	-10.34	0.0121	0.2015	0.0559
Percent Black/ Hispanic, 1980	5	-1.69	0.0254	0.2269	0.0051
Per capita income, 1980	6	-0.01	0.0045	0.2314	0.2375
		Metropolitan			
Intercept		234.09			
Percent of persons widowed, 1980	1	-27.53	0.1466	0.1466	0.0066
Percent of persons never married, 1980	2	-4.70	0.0796	0.2262	0.0348
Percent employed in retail/ wholesale trade, 1980	3	8.66	0.0660	0.2922	0.0465
		Nonmetropolitan			
Intercept		563.04			
Percent of persons in poverty, 1980	1	-4.77	0.0833	0.0833	0.0001
Percent of persons widowed, 1980	2	-10.48	0.0385	0.1218	0.0040
Percent employed in manufacturing, 1980	3	-3.58	0.0166	0.1384	0.0550
Per capita income, 1980	4	-0.03	0.0194	0.1578	0.0369
Percent Black/ Hispanic, 1980	5	-1.83	0.0158	0.1736	0.0572
Index of declining industries, 1980	6	97.51	0.0129	0.1915	0.0419
Percent urban, 1980	7	0.26	0.0030	0.1945	0.3992

Table 7 (continued)

Variable	Order of Entrance	Parameter Estimate	Partial R^2	Model R^2	Probability > F
All Counties					
Model 4: Percent Change 1980-90 AFDC on Percent Change 1980-90 in Selected Independent Variables					
Intercept		85.94			
Percent change in Black/Hispanic, 1980-90	1	1.68	0.1346	0.1346	0.0001
Percent change in high school graduates, 1980-90	2	-0.58	0.0566	0.1912	0.0001
Percent change in persons employed in construction, 1980-90	3	0.82	0.0228	0.2140	0.0082
Percent change in persons employed in retail/ wholesale trade, 1980-90	4	-0.63	0.0148	0.2289	0.0312
Percent change in female householders, 1980-90	5	0.38	0.0100	0.2388	0.0759
Metropolitan status, 1980	6	27.76	0.0051	0.2439	0.2019
Percent change in civilian male labor force, 1980-90	7	-0.91	0.0039	0.2478	0.2677
Metropolitan					
Intercept		-72.49			
Percent change in persons 65 years and older, 1980-90	1	3.17	0.2372	0.2372	0.0004
Percent change in persons under 18 years of age, 1980-90	2	-5.86	0.0420	0.2793	0.1083
Percent change in Black/ Hispanic population, 1980-90	3	1.95	0.1838	0.4631	0.0003
Percent change in females, unemployed, 1980-90	4	0.49	0.0499	0.5130	0.0394
AFDC recipients, 1980	5	-0.00	0.0537	0.5666	0.0259
Nonmetropolitan					
Intercept		153.85			
Percent change in Black/ Hispanic population, 1980-90	1	1.45	0.1261	0.1261	0.0001
Percent change in persons divorced, 1980-90	2	-0.49	0.0444	0.1705	0.0014
Percent change in persons employed in construction, 1980-90	3	0.78	0.0287	0.1992	0.0088
AFDC recipients, 1980	4	-0.05	0.0254	0.2246	0.0123
Percent change in persons employed in retail/ wholesale trade, 1980-90	5	-0.51	0.0141	0.2387	0.0592
Percent change in female householders, 1980-90	6	0.42	0.0121	0.2508	0.0789
Percent change in median family income, 1980-90	7	-0.41	0.0049	0.2557	0.2605
Percent change in high school graduates, 1980-90	8	-0.34	0.0022	0.2580	0.4500

Table 8

Unstandardized[+] and Standardized Regression Coefficients and Adjusted Multiple Coefficients of Determination (R^2) for the Regression of the Number of AFDC Recipients in 1980 on Selected 1980 Indicators for Texas Counties by Metropolitan/Nonmetropolitan Status

	All Counties		Metropolitan		Nonmetropolitan	
Variable	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Intercept	-1589.55	0.00	-3947.61	0.00	-165.41	0.00
Total population, 1980	0.02*	0.93	0.02*	0.89	0.02*	0.67
Percent Black/Hispanic, 1980	16.11	0.07	27.44	0.06	5.79*	0.32
Percent urban, 1980	-5.75	-0.03	--	--	--	--
Percent of persons under 18 years of age, 1980	-7.76	-0.01	--	--	-2.69	-0.05
Percent of persons 16-19 years of age not high school graduates, 1980	-3.11	-0.00	-8.22	-0.00	-4.21	-0.08
Percent of persons 16-19 years of age not high school graduates and unemployed, 1980	22.34	0.01	--	--	22.60*	0.08
Percent of persons separated, 1980	-97.27	-0.01	--	--	42.24	0.06
Percent of persons divorced, 1980	-44.22	-0.01	--	--	-14.66	-0.05
Percent female householders (no husband present), 1980	160.63	0.08	422.57	0.10	28.88*	0.17
Percent employed in mining, 1980	2.05	0.00	--	--	-0.83	-0.02
Percent employed in construction, 1980	-13.22	-0.01	--	--	2.73	0.03
Percent employed in manufacturing, 1980	-10.59	-0.02	-48.54	-0.03	2.64	0.06
Percent employed in retail/wholesale trade, 1980	56.97	0.04	-50.82	-0.01	-4.31	-0.03
Percent females unemployed, 1980	32.17	0.02	134.26	0.03	-0.99	-0.01
Percent persons in poverty, 1980	-1.28	-0.00	100.96	0.07	1.89	0.04
Metropolitan status, 1980	122.29	0.01	--	--	--	--
Adjusted R^2	0.90	--	0.90	--	0.79	--

[+] In several cases, an unstandardized coefficient of 0.00 or -0.00 is shown. In all cases, these were non-zero values which rounded to 0.00. The sign was retained to provide an indication of the nature of the relationship.

* Indicates value is statistically significant at the level of 0.05 or less.

Table 9

Unstandardized+ and Standardized Regression Coefficients and Adjusted Multiple Coefficients of Determination (R^2) for the Regression of the Number of AFDC Recipients in 1990 on Selected 1990 Indicators for Texas Counties by Metropolitan/Nonmetropolitan Status

	All Counties		Metropolitan		Nonmetropolitan	
Variable	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Intercept	-8457.33	0.00	-16902.00	0.00	-1492.36	0.00
Total population, 1990	0.04*	0.99	0.04*	0.99	0.04*	0.85
Percent Black/ Hispanic, 1990	10.97	0.02	37.83	0.04	3.54	0.13
Percent other, 1990	-668.53*	-0.06	-450.68	-0.03	62.29	0.05
Percent urban, 1990	-7.26	-0.02	-66.90	-0.07	-0.85	-0.04
Percent of persons under 18 years of age, 1990	248.32*	0.10	441.08	0.07	17.98	0.13
Percent high school graduates, 1990	6.91	0.01	--	--	7.69	0.11
Percent of persons, 16-19 years of age not high school graduates, 1990	-11.37	-0.01	--	--	-1.54	-0.02
Percent of persons, 16-19 years of age not high school graduates and unemployed, 1990	-12.35	-0.00	--	--	18.22	0.05
Median age, 1990	104	0.05	695.29	0.09	15.99*	0.13
Median household income, 1990	-0.22*	-0.12	--	--	-0.01	-0.07
Percent of persons separated, 1990	-442.01	-0.03	--	--	74.06	0.08
Percent of persons divorced, 1990	-59.70	-0.01	--	--	-43.86*	-0.10
Percent male householders (no wife present), 1990	102.96	0.01	--	--	-1.80	-0.00
Percent female householders (no husband present), 1990	174.59	0.06	-304.41	-0.04	47.33*	0.24
Percent employed in mining, 1990	-8.54	-0.01	-112.63	-0.02	0.26	0.00

Table 9 (Continued)

Variable	All Counties		Metropolitan		Nonmetropolitan	
	Unstan-dardized	Standard-ized	Unstan-dardized	Standard-ized	Unstan-dardized	Standard-ized
Percent employed in manufacturing, 1990	-11.38	-0.01	-478.91*	-0.13	-5.10	-0.06
Percent employed in services, 1990	51.83	0.03	--	--	-5.55	-0.04
Percent employed in retail/ wholesale trade, 1990	67.49	0.03	-162.86	-0.01	-8.14	-0.05
Percent employed in government, 1990	35.09	0.02	--	--	2.97	0.03
Percent of males unemployed, 1990	-39.63	-0.01	--	--	-2.75	-0.02
Percent of females unemployed, 1990	90.66	0.03	--	--	11.66	0.06
Percent of persons in poverty, 1990	-107.39*	-0.10	305.05	0.12	2.72	0.04
Metropolitan status, 1980	750.60	0.03	--	--	--	--
Percent unemployed, 1990	--	--	-20.52	-0.07	--	--
Percent employed in construction, 1990	--	--	-242.80	-0.03	-9.19	-0.04
Adjusted R^2	0.94	--	0.93	--	0.87	--

+ In several cases, an unstandardized coefficient of 0.00 or -0.00 is shown. In all cases, these were non-zero values which rounded to 0.00. The sign was retained to provide an indication of the nature of the relationship.

* Indicates value is statistically significant at the level of 0.05 or less.

Table 10

Unstandardized[+] and Standardized Regression Coefficients and Adjusted Multiple Coefficients of Determination (R^2) for the Regression of the Percent Change in the Number of AFDC Recipients, 1980-90, on Selected 1980 Indicators for Texas Counties by Metropolitan/Nonmetropolitan Status

	All Counties		Metropolitan		Nonmetropolitan	
Variable	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Intercept	-294.06	0.00	-273.23	0.00	-250.18	0.00
Total population, 1980	0.00	0.01	-0.00	-0.08	-0.00	-0.06
Percent Black/ Hispanic, 1980	-2.16*	-0.39	-0.99	-0.23	-1.95	-0.34
Percent urban, 1980	-0.27	-0.07	1.26	0.30	-0.35	-0.08
Percent of persons under 18 years of age, 1980	4.77*	0.28	1.68	0.11	4.08	0.24
Percent high school graduates, 1980	0.41	0.03	--	--	1.05	0.07
Per capita income, 1980	-0.01	-0.06	--	--	-0.01	-0.11
Percent male householders (no wife present), 1980	25.19*	0.14	--	--	23.77	0.14
Percent female householders (no husband present), 1980	-2.98	-0.06	-13.45	-0.34	-2.05	-0.04
Percent of persons separated, 1980	-5.14	-0.02	--	--	-7.13	-0.03
Percent employed in government, 1980	1.16	0.06	--	--	0.51	0.02
Percent employed in services, 1980	3.47	0.14	--	--	4.03	0.15
Percent employed in mining, 1980	4.74*	0.30	-1.43	-0.07	5.02*	0.32
Percent employed in construction, 1980	-0.39	-0.01	14.07*	0.38	-1.12	-0.03
Percent employed in manufacturing, 1980	-0.87	-0.06	-1.88	-0.14	-0.36	-0.02
Percent employed in retail/wholesale trade, 1980	8.93*	0.27	15.75*	0.47	8.52*	0.25
Percent of females unemployed, 1980	1.59	0.03	-9.84	-0.23	3.02	0.07
Percent of persons in poverty, 1980	-2.86	-0.18	--	--	-3.08	-0.19
Metropolitan status, 1980	7.56	0.03	--	--	--	--
Adjusted R^2	0.20	--	0.37	--	0.18	--

[+] In several cases, an unstandardized coefficient of 0.00 or -0.00 is shown. In all cases, these were non-zero values which rounded to 0.00. The sign was retained to provide an indication of the nature of the relationship.

* Indicates value is statistically significant at the level of 0.05 or less.

Table 11

Unstandardized+ and Standardized Regression Coefficients and Adjusted Multiple Coefficients of Determination (R^2) for the Regression of the Percent Change in the Number of AFDC Recipients, 1980-90, on the Percent Change in 1980-90 Selected Indicators for Texas Counties by Metropolitan/Nonmetropolitan Status

	All Counties		Metropolitan		Nonmetropolitan	
Variable	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Intercept	72.95	0.00	-62.82	0.00	198.96	0.00
Percent change in median age, 1980-90	1.50	0.08	5.21	0.21	1.34	0.08
Percent change in persons employed in construction, 1980-90	0.67*	0.16	-0.69	-0.16	0.60	0.14
Percent change in persons employed in mining, 1980-90	-0.03	-0.01	-0.41	-0.23	-0.14	-0.04
Percent change in persons employed in retail/wholesale trade, 1980-90	-0.91*	-0.25	--	--	-0.97	-0.21
Percent change in persons employed in agriculture, 1980-90	0.41	0.13	-0.29	-0.12	0.71*	0.18
Percent change in persons employed in manufacturing, 1980-90	0.08	0.04	-0.69	-0.24	-0.01	-0.00
Percent change in persons employed in services, 1980-90	0.41	0.13	--	--	0.55	0.14
Percent change in persons employed in government, 1980-90	-0.47	-0.12	-0.47	-0.15	-0.93	-0.21
Percent change in median household income, 1980-90	-0.40	-0.06	-0.63	-0.13	1.00	0.15
Percent change in female householders, 1980-90	0.67*	0.22	-0.18	-0.07	0.71*	0.21
Percent change in male householders, 1980-90	-0.11	-0.09	--	--	-0.08	-0.07

Table 11 (Continued)

Variable	All Counties		Metropolitan		Nonmetropolitan	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Percent change in persons divorced, 1980-90	-0.09	-0.04	--	--	-0.02	-0.01
Percent change in persons in poverty, 1980-90	-0.69	-0.06	-0.94	-0.11	0.11	0.01
Percent change in urban, 1980-90	-0.00	-0.08	-0.17	-0.07	-0.00	-0.09
AFDC recipients, 1980	-0.00	-0.13	-0.00	-0.16	-0.08*	-0.27
Percent change in Black/ Hispanic, 1980-90	1.76*	0.55	2.40*	0.97	1.29*	0.37
Percent change in high school graduates, 1980-90	-1.33*	-0.34	--	--	-1.39	-0.28
Percent change in females unemployed, 1980-90	0.07	0.05	0.42	0.30	0.01	0.01
Percent change in males unemployed, 1980-90	-0.06	-0.08	-0.03	-0.04	-0.08	-0.10
Metropolitan status, 1980	13.93	0.06	--	--	--	--
Percent change in persons widowed, 1980-90	--	--	--	--	0.16	0.02
Percent change in persons never married, 1980-90	--	--	--	--	0.77	0.13
Percent change in nonfamily households, 1980-90	--	--	--	--	-0.05	-0.01
Percent change in median family income, 1980-90	--	--	--	--	-0.02	-0.12
Percent change in per capita income, 1980-90	--	--	--	--	-0.77	-0.10
Adjusted R^2	0.26	--	0.38	--	0.24	--

+ In several cases, an unstandardized coefficient of 0.00 or -0.00 is shown. In all cases, these were non-zero values which rounded to 0.00. The sign was retained to provide an indication of the nature of the relationship.

* Indicates value is statistically significant at the level of 0.05 or less.

Table 12

Results from Stepwise Regression of the Number of AFDC Recipients on the 1980-90 Percent Change in AFDC Recipients on Selected Independent Variable for Texas by Counties

Variable	All Counties				
	Order of Entrance	Parameter Estimate	Partial R^2	Model R^2	Probability > F
Model 1: 1980 AFDC on Selected Independent Variable for 1980					
Intercept		-2207.39			
Total population, 1980	1	0.02	0.8866	0.8866	0.0001
Percent Black/ Hispanic, 1980	2	20.83	0.0125	0.8991	0.0001
Percent female householders, 1980	3	114.04	0.0018	0.9009	0.0493
Percent persons employed in retail/ wholesale trade, 1980	4	58.71	0.0006	0.9015	0.2672
Percent urban, 1980	5	-5.81	0.0008	0.9023	0.1893
Model 2: 1990 AFDC on Selected Independent Variables for 1990					
Intercept		-7538.52			
Total population, 1990	1	0.04	0.9257	0.9257	0.0001
Median household income, 1990	2	-0.22	0.0078	0.9335	0.0001
Percent persons under 18 years of age, 1990	3	244.72	0.0024	0.9359	0.0027
Percent other population, 1990	4	-666.04	0.0018	0.9377	0.0078
Percent employed in services, 1990	5	48.73	0.0008	0.9385	0.0765
Percent employed in construction, 1990	6	69.97	0.0005	0.9390	0.1443
Metropolitan status, 1990	7	765.90	0.0005	0.9395	0.1612
Percent persons in poverty, 1990	8	-108.38	0.0005	0.9400	0.1425
Percent not high school graduates, 16-19 years of age, 1990	9	-16.73	0.0002	0.9402	0.3517
Percent Black/ Hispanic, 1990	10	16.08	0.0002	0.9404	0.3339
Median age, 1990	11	96.70	0.0003	0.9408	0.2487
Percent female householders, 1990	12	1425.37	0.0003	0.9411	0.3109
Percent persons separated, 1990	13	-480.84	0.0002	0.9412	0.3685
Percent females unemployed, 1990	14	64.17	0.0002	0.9414	0.3716
Percent urban, 1990	15	-7.75	0.0002	0.9416	0.3789
Percent employed in retail/ wholesale trade, 1990	16	63.14	0.0002	0.9418	0.4199
Percent employed in government, 1990	17	37.39	0.0002	0.9420	0.3183

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Table 12 (continued)

Variable	Order of Entrance	Parameter Estimate	Partial R^2	Model R^2	Probability > F
		All Counties			
Model 3: Percent Change, 1980-90 AFDC on Selected Variables for 1980					
Intercept		-280.36			
Percent persons in poverty, 1980	1	-2.77	0.1028	0.1028	0.0001
Percent employed in mining, 1980	2	4.53	0.0398	0.1426	0.0008
Percent employed in retail/ wholesale trade, 1980	3	7.98	0.0468	0.1894	0.0002
Percent high school graduates, 1980	4	1.10	0.0100	0.1994	0.0827
Percent of persons separated, 1980	5	-7.82	0.0100	0.2094	0.0801
Per capita income, 1980	6	-0.01	0.0087	0.2181	0.1025
Percent male householders, 1980	7	24.41	0.0049	0.2230	0.2195
Percent Black/ Hispanic, 1980	8	-2.08	0.0054	0.2284	0.1958
Percent persons under 18 years of age, 1980	9	4.68	0.0101	0.2385	0.0759
Percent employed in services, 1980	10	3.71	0.0093	0.2478	0.0873
Percent employed in manufacturing, 1980	11	-1.13	0.0049	0.2528	0.2124
Percent urban, 1980	12	-0.27	0.0021	0.2548	0.4191
Model 4: Percent Change 1980-90 AFDC on Percent Change 1980-90 in Selected Independent Variables					
Intercept		103.99			
Percent change in Black/Hispanic population, 1980-90	1	1.80	0.1381	0.1381	0.0001
Percent change in high school graduates, 1980-90	2	-1.56	0.0827	0.2208	0.0001
Percent change in female householders, 1980-90	3	0.66	0.0347	0.2556	0.0029
Percent change in persons employed in construction, 1980-90	4	0.61	0.0093	0.2649	0.1179
Percent change in persons employed in retail/wholesale trade, 1980-90	5	-0.97	0.0096	0.2746	0.1180
Percent change in persons employed in agriculture, 1980-90	6	0.43	0.0120	0.2866	0.0728
AFDC recipients, 1980	7	-0.00	0.0084	0.2950	0.1314
Metropolitan status, 1980	8	17.28	0.0081	0.3031	0.1373

Table 12 (continued)

Variable	All Counties				
	Order of Entrance	Parameter Estimate	Partial R^2	Model R^2	Probability > F
Percent change in median age, 1980-90	9	1.83	0.0045	0.3076	0.2695
Percent change in persons employed in government, 1980-90	10	-0.48	0.0055	0.3131	0.2297
Percent change in urban, 1980-90	11	-0.00	0.0038	0.3169	0.3057
Percent change in persons employed in services, 1980-90	12	0.46	0.0032	0.3201	0.3515
Percent change in males unemployed, 1980-90	13	-0.05	0.0030	0.3231	0.3679
Percent change in male householders, 1980-90	14	-0.08	0.0030	0.3260	0.3691